

# Vital and Health Statistics

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## Summary Health Statistics for U.S. Adults: National Health Interview Survey, 2008

### Data From the National Health Interview Survey

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National Center for Health Statistics

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## **Abstract**

### **Objectives**

This report presents health statistics from the 2008 National Health Interview Survey for the civilian noninstitutionalized adult population, classified by sex, age, race and ethnicity, education, family income, poverty status, health insurance coverage, marital status, and place and region of residence. Estimates are presented for selected chronic conditions and mental health characteristics, functional limitations, health status, health behaviors, health care access and utilization, and human immunodeficiency virus testing. Percentages and percent distributions are presented in both age adjusted and unadjusted versions.

### **Source of Data**

NHIS is a household, multistage probability sample survey conducted annually by interviewers of the U.S. Census Bureau for the Centers for Disease Control and Prevention's National Center for Health Statistics. In 2008, data were collected on 21,781 adults in the Sample Adult questionnaire. The conditional response rate was 74.2%, and the final response rate was 62.6%. The health information for adults in this report was obtained from one randomly selected adult per family. In very rare instances where the sample adult was not able to respond for himself or herself, a proxy was used.

## Highlights

In 2008, 61% of adults 18 years of age or over reported excellent or very good health. Fifty-nine percent of adults never participated in any type of vigorous leisure-time physical activity, and 16% of adults did not have a usual place of health care. Twelve percent of adults had been told by a doctor or health professional that they had heart disease, and 24% had been told on two or more visits that they had hypertension. Twenty-one percent of all adults were current smokers, and 21% were former smokers. Based on estimates of body mass index, 35% of adults were overweight and 27% were obese.

**Keywords:** adult health · chronic conditions · health behavior · health utilization · mental health · HIV

# **Summary Health Statistics for U.S. Adults: National Health Interview Survey, 2008**

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## **Introduction**

This report is one in a set of reports summarizing data from the 2008 National Health Interview Survey (NHIS), a multipurpose health survey conducted by the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics (NCHS). This report provides national estimates for a broad range of health measures for the U.S. civilian noninstitutionalized population of adults. Two other reports in this set provide estimates of selected health measures for the U.S. population and for children under 18 years of age (1,2). These three volumes of descriptive statistics and highlights are published for each year of NHIS (3-5), and since 1997 have replaced the annual, one-volume Current Estimates series (6).

Estimates are presented here for selected chronic conditions, selected mental health characteristics, functional limitations, health status, health behaviors, health care access and utilization, and human immunodeficiency virus (HIV) testing status, and are derived from the Sample Adult Core component of the annual NHIS Basic Module. These health estimates are shown in Tables 1-41 for various subgroups of the population, including those defined by sex, age, race and ethnicity, education (for persons aged 25 or over), family income, poverty status, health insurance coverage, marital status,

place of residence, and region of residence. Appendix I contains brief technical notes and detailed information about age adjustment and unknown values (Tables I-III), Appendix II contains definitions of selected terms used in this report, and Appendix III contains tables of unadjusted health estimates.

The NHIS has been an important source of information about health and health care in the United States since it was first conducted in 1957. Given the ever-changing nature of the U.S. population, the NHIS questionnaire has been revised every 10–15 years, with the latest revision occurring in 1997. The first design changes were introduced in 1973 and the first procedural changes in 1975 (7). In 1982, the NHIS questionnaire and data preparation procedures of the survey were extensively revised. The basic concepts of the NHIS changed in some cases, and in other cases the concepts were measured in a different way. A more complete explanation of the 1982 changes is in Appendix IV of Series 10, No. 150 (8). In 1985, a new sample design for NHIS and a different method of presenting sampling errors were introduced (9,10). In 1995, another change in the sample design was introduced, including the oversampling of black and Hispanic or Latino persons (11).

The 1997 NHIS featured both a substantially revised instrument (in terms of questionnaire content) and a new means of administration (i.e., computer-assisted personal interviewing). This new design improves the ability of the NHIS to provide important health information. However, comparisons of NHIS data collected before and after the beginning of 1997 should not be undertaken without a careful examination of the changes across survey instruments (6,8,10).



In response to the changing demographics of the U.S. population, in 1997 the Office of Management and Budget (OMB) issued new standards for the collection of data on race and Hispanic or Latino origin (12). Most notably, the new standards allow respondents to the census and Federal surveys to indicate more than one group in answering questions on race. Additionally, the category "Asian or Pacific Islander" is now split into two distinct categories, "Asian" and "Native Hawaiian or Other Pacific Islander" (NHOPI), for data collection purposes. Although the NHIS had allowed respondents to choose more than one race group for many years, the NHIS became completely compliant with all of the new race and ethnicity standards with the fielding of the 1999 survey. The tables in this report reflect these new standards. The text in this report uses shorter versions of the new OMB race and Hispanic or Latino origin terms for conciseness, but the tables use the complete terms. For example, the category "Not Hispanic or Latino, black or African American, single race" in the tables is referred to as "non-Hispanic black" in the text.

As has been mentioned previously, the sample for the NHIS is redesigned and redrawn about every 10 years to better measure the changing U.S. population and to meet new survey objectives. A new sample design for the NHIS was implemented in 2006. The fundamental structure of the new 2006 NHIS sample design is very similar to the previous 1995-2005 NHIS sample design, including state-level stratification. The new sample design reduced the NHIS sample size by about 13% compared with the 1995-2005 NHIS. Oversampling of the black and Hispanic populations has been retained in 2006 (and beyond) to allow for more precise

estimation of health characteristics in these growing minority populations. The new sample design also oversamples the Asian population. In addition, the sample adult selection process has been revised so that when black, Hispanic, or Asian persons aged 65 or over are present, they have an increased chance of being selected as the sample adult.

Additionally, beginning with the 2003 NHIS, editing procedures were changed to maintain consistency with the U.S. Census Bureau procedures for collecting and editing data on race and ethnicity. As a result of these changes, in cases where "Other race" was mentioned along with one or more OMB race groups, the "Other race" response is dropped, and the OMB race group information is retained on the NHIS data file. In cases where "Other race" was the only race response, it is treated as missing and the race is imputed. Although this change has resulted in an increase in the number of persons in the OMB race category "White" because this is numerically the largest group, the change is not expected to have a substantial effect on the estimates in this report. More information about the race and ethnicity editing procedures used by the Census Bureau can be found at the following website:

<http://www.census.gov/popest/archives/files/MRSF-01-US1.pdf>.

## **Methods**

### **Data Source**

The main objective of the NHIS is to monitor the health of the U.S. population through the collection and analysis of data on a broad range of health topics. The

target population for the NHIS is the civilian noninstitutionalized population of the United States. Persons excluded are patients in long-term care institutions (e.g., nursing homes for the elderly; hospitals for the chronically ill, disabled, or retarded; and wards for abused or neglected children), correctional facilities (e.g., prisons or jails, juvenile detention centers, halfway houses), active duty Armed Forces personnel (although their civilian family members are included); and U.S. nationals living in foreign countries. Each year, a representative sample of households across the country is selected for the NHIS using a multistage cluster sample design. Details on sample design used for the 1995-2005 NHIS can be found in "Design and Estimation for the National Health Interview Survey, 1995-2004" (11). A new report providing a complete description of the 2006 NHIS sample design is being developed. Trained interviewers from the U.S. Census Bureau visit each selected household and administer the NHIS in person. Detailed interviewer instructions can be found in the NHIS *Field Representative's Manual* (13).

The annual NHIS questionnaire, now called the Basic Module or Core, consists of three main components: the Family Core, the Sample Adult Core, and the Sample Child Core. The Family Core collects information for all family members regarding household composition and sociodemographic characteristics, along with basic indicators of health status, activity limitations, and utilization of health care services. Any responsible family member equal to or greater than the age of majority for a given state may respond to questions in the Family Core. In most states this age is 18 years, but in Alabama and

Nebraska this age is 19 and in Mississippi it is 21. For children and for adults not available during the interview, information is provided by a knowledgeable adult family member (usually aged 18 years or over, see above) residing in the household. Although considerable effort is made to ensure accurate reporting, the information from both proxies and self-respondents may be inaccurate because the respondent is unaware of relevant information, has forgotten it, does not wish to reveal it to an interviewer, or does not understand the intended meaning of the question.

The Sample Adult and Sample Child Cores obtain additional information on the health of one randomly selected adult and child in the family. The sample adult responds for himself or herself, and a knowledgeable adult in the family provides proxy responses for the sample child. In rare instances when the sample adult is mentally or physically incapable of responding, proxy responses are accepted for this person. The Sample Adult Core, the primary source of data for this report, collects information on health conditions, activity limitations, health behaviors, and access to and utilization of health care services from one randomly selected adult per family. The information regarding demographic characteristics in this report is obtained from the Family Core.

The interviewed sample for 2008 consisted of 28,790 households, which yielded 74,236 persons in 29,421 families. There were 29,370 adults eligible for the Sample Adult questionnaire. Data were collected for 21,781 adults, a conditional response rate of 74.2% (the number of completed Sample Adult interviews divided by the total number of eligible sample adults). The unconditional or

final response rate for the Sample Adult Core component was calculated by multiplying the conditional rate by the overall family response rate of 84.5%, yielding a final Sample Adult component response rate of 62.6% (14).

### **Estimation Procedures**

The Sample Adult weights were used to produce the national health estimates contained in this report. For each health measure, both weighted frequencies and percentages (or rates) for all adults and for various subgroups of the adult population are shown. All counts are expressed in thousands. Counts for persons of unknown status with respect to health characteristics of interest are not shown separately in the tables, nor are they included in the calculation of percentages (and/or rates), to make the presentation of the data more straightforward. For all health measures in this report, the percentages with unknown values are typically small (generally less than 1%) and are shown in Table II in Appendix I. Nevertheless, these unknown cases are included in the total population counts shown in selected tables. Therefore, it should be noted that the reader may obtain slightly different percentages than those shown in the tables if percentages are calculated based on the frequencies and population counts presented in the tables.

In addition, some of the sociodemographic variables that are used to delineate various subgroups of the population have unknown values. For most of these variables, the percentage unknown is small. However, in the case of family income, there is no income information for about 5% of sample adults in the 2008 survey, and about 18% of sample adults only provided a broad range for their

family's income (refer to the section on Income and Poverty Status Changes for more information). Poverty status, which is based on family income, has a high nonresponse rate as a result (see Appendix I) (15). Missing data on family income and personal earnings in the NHIS have been imputed by NCHS analysts using multiple-imputation methodology. Five ASCII data sets containing imputed values for the survey year and additional information about the imputed income files can be found at <http://www.cdc.gov/nchs/nhis.htm>. However, income and poverty estimates in this publication are based only on reported income and may differ from other measures that are based on imputed data (which were not available when this report was prepared). Health estimates for sample adults with these unknown sociodemographic characteristics are not shown in the tables. See Table III in Appendix I for more information on the extent of unknown data for income and poverty status.

### **Transition to the 2000 Census-Based Weights**

In Summary Health Statistics reports prior to 2003, the weights for the NHIS data were derived from 1990 census-based postcensal population estimates. Beginning with the 2003 data, NHIS transitioned to weights derived from the 2000 census-based population estimates. The impact of this transition was assessed for the 2002 NHIS by comparing estimates for selected health characteristics using the 1990 census-based weights with those using the 2000 census-based weights. Although the effect of new population controls on survey estimates differed by type of health characteristic, the effect of this change on health

characteristic rates was small but was somewhat larger for weighted frequencies (16).

### **Age Adjustment**

Beginning with the 2002 Summary Health Statistics report, estimates have been provided in two sets of tables. Unless otherwise specified, percentages in the first set (Tables 1-41) were age adjusted to the projected 2000 U.S. standard population. Age adjustment was used to permit comparison among various sociodemographic subgroups that may have different age structures (17,18). The age groups used for age adjustment in this report are 18-44, 45-64, 65-74 and 75 years and over, unless otherwise noted (see Table I in Appendix I). Health insurance and education are restricted to certain age groups, and are therefore adjusted accordingly (see relevant footnotes on tables for age groups). The age-adjusted estimates shown in the tables may not match age-adjusted estimates for the same health characteristic in other reports if different age groups were used for age adjustment. Tables IV-XXIII in Appendix III provide unadjusted estimates so that readers may compare current estimates with those published in the 1997-2001 Summary Health Statistics reports and may see the effects of age adjustment on the 2008 estimates (See Appendix I for details on age adjustment). Frequency tables have been removed from the set of unadjusted tables in Appendix III to eliminate redundancy in the report.

### **Sample Reductions in the 2008 National Health Interview Survey**

As in 2002-2004 and 2006-2007, the 2008 National Health Interview Survey (NHIS) was faced with a budget

shortfall. As a result, NCHS and the Division of Health Interview Statistics (DHIS) decided to reduce the size of the 2008 NHIS sample. The goal of the 2008 sample cuts was strictly monetary savings. The NHIS sample was reduced by approximately 50% during October–December 2008. The 2008 sample reduction was implemented in the same way as the 2006 and 2007 sample reductions. The timing of the reduction was different in 2008 than in 2006 and 2007; the 2006 and 2007 reductions occurred during July–September. Overall, about 13% of the households in the 2008 NHIS sample were deleted from interviewers' assignments. This cutback was in addition to the ongoing 13% reduction due to the new sample design that was implemented in 2006.

#### **Income and Poverty Status Changes**

Starting with the 2007 NHIS, the income amount follow-up questions, which had been in place since 1997, were replaced with a series of unfolding bracket questions. This decision was based on a) the relatively poor performance of the 1997–2006 versions of the follow-up income amount questions, and b) the results of a 2006 field test that compared unfolding bracket follow-up questions to the income amount follow-up questions used since 1997. For more information about the 2006 field test, data analysts should refer to Appendix I.

The unfolding bracket method utilized a series of closed-ended income range questions (e.g., "Is it less than \$50,000?") for respondents who failed to provide the exact amount of the family's income. The closed-ended income range questions were constructed so that each successive



question established a smaller range for the amount of the family's income in the last calendar year.

Based on results from the 2006 field test, the unfolding bracket follow-up income questions performed better than the follow-up income questions used from 1997–2006. For example, the percentage of unknown responses for a three-category poverty status variable was 17% using the income bracket follow-up questions compared with 31% using the income follow-up questions used from 1997 to 2006.

Because of these positive results, the unfolding bracket income follow-up questions were implemented during the first quarter of the 2007 NHIS. Due to the differences in the income follow-up questions between 1997–2006 and 2007–2008, income and poverty status estimates from 2007–2008 may not be comparable with those from prior years.

### **Limitations of the Data**

As mentioned previously, the redesigned NHIS is quite different in content, format, and mode of data collection from earlier versions of the survey. These changes can make it complex to compare 1997–2008 NHIS estimates with those of earlier years. The 2006–2008 NHIS is based on a different sample design, including the oversampling of all Asians as well as Hispanic, black, or Asian sample adults at least 65 years of age, and a permanent sample reduction of 13%, compared with the 1997–2005 NHIS. The change in sample design should be considered when comparing estimates from the 2006–2008 NHIS with those from earlier years. Beginning in 2003, the NHIS uses weights derived from the 2000 census-based population estimates. Analysts who compare NHIS frequencies across this transition, e.g., comparing 2005 to 2002, need to recognize that some of the

observed differences may be due to the change in the population estimates. Unadjusted percentage estimates shown in the Appendix III tables of this report may be compared with those published in Summary Health Statistics reports of 1997–2001, which did not contain age-adjusted estimates. Age-adjusted estimates in this report should not be compared with earlier unadjusted estimates unless it can be demonstrated that the effect of age adjustment is minimal.

It is important to note that frequencies are underestimates due to item nonresponse and unknowns, both of which are excluded from the tables (with the exception of the "All persons" or "Total" columns shown in each table). See Appendix I for more information about the number of unknowns with respect to each health characteristic.

Interpretation of estimates should be made only after reviewing Appendix I, which contains important information about the methods used to obtain the estimates, changes in the survey instrument, and any measurement issues that are currently being evaluated.

### **Variance Estimation and Significance Testing**

The NHIS data are based on a sample of the population, and are, therefore, subject to sampling error. Standard errors are reported to indicate the reliability of the estimates. Estimates and standard errors were calculated using SUDAAN software that takes into account the complex sampling design of the NHIS. The Taylor series linearization method was used for variance estimation in SUDAAN (19).

Standard errors are shown for all percentages in the tables (but not for the frequencies). Estimates with

relative standard errors of greater than 30% and less than or equal to 50% are considered statistically unreliable and are indicated with an asterisk (\*). Estimates with a relative standard error greater than 50% are indicated with a dagger (†) and the estimates are not shown. The statistical significance of differences between point estimates was evaluated using two-sided *t*-tests at the 0.05 level and assuming independence. Terms such as "greater than," "less than," "more likely," "less likely," "compared with," or "opposed to" indicate a significant difference between estimates, whereas "similar," "no difference," or "comparable" indicate that the estimates are not significantly different. A lack of commentary about any two estimates should not be interpreted to mean that a *t*-test was performed and the difference was found to be not significant. Furthermore, these tests did not take multiple comparisons into account.

### **Further Information**

Data users can obtain the latest information about the National Health Interview Survey from the NCHS Web site: <http://www.cdc.gov/nchs/nhis.htm>. The website features downloadable public use data and documentation for recent National Health Interview Surveys, as well as important information about any modifications or updates to the data and/or documentation.

Researchers may also wish to join the NHIS electronic mail list. To do so, go to <http://www.cdc.gov/subscribe.html>. Fill in the appropriate information, and click the "National Health Interview Survey (NHIS) researchers" box, followed by the "Subscribe" button at the bottom of the

page. The list serve consists of approximately 4,000 NHIS data users located around the world who receive e-news about NHIS data (e.g., new releases of data or modifications to existing data), publications, conferences, and workshops.

## **Selected Highlights**

In the following section, brief, bulleted summaries of the estimates shown in Tables 1–41 are presented.

Estimates were age adjusted by the direct method using the 2000 U.S. population as the standard population. In most cases, the age groups used to adjust estimates are the same age groups presented in the tables (see table notes for age adjustment groups). All estimates were calculated using the Sample Adult weight variable, which is calibrated by NCHS staff to produce numbers consistent with estimates of the adult civilian noninstitutionalized population of the United States by sex, age, and race and ethnicity, based on projections from the 2000 U.S. Census.

### **Selected Circulatory Conditions (Tables 1,2)**

- Overall, 12% of adults 18 years of age and over had ever been told by a doctor or other health professional they had heart disease, 6% had ever been told they had coronary heart disease, 24% had been told on two or more visits that they had hypertension, and 3% had ever been told they had experienced a stroke.
- Among adults 18 years of age and over, men were more likely to have ever been told they had coronary heart disease than were women. The prevalence of hypertension in men and women were similar.

- There was a positive relationship between age and the presence of heart disease (including coronary heart disease), hypertension, and stroke; as age increased, the percentages of adults with these conditions also increased.
- When results are considered by single race without regard to ethnicity, Asian adults were less likely to have ever been told they had any type of heart disease than were white adults. Asian adults and white adults were less likely to have been told they had hypertension compared with black adults.
- When results are considered by single race and ethnicity, Hispanic adults were less likely to have been told than they had any type of heart disease than non-Hispanic white adults. Thirty-two percent of non-Hispanic black adults had ever been told they had hypertension compared with 21% of Hispanic adults and 24% of non-Hispanic white adults.
- Education was inversely associated with heart disease (any type), hypertension and stroke; as the educational level increased, the percentages of adults with these conditions decreased.
- Poverty level was inversely associated with heart disease (any type) and hypertension; adults in families that were poor or near poor were more likely to have ever been told they had these conditions than were adults in families that were not poor.
- Among adults under age 65, those covered by Medicaid were more likely to have been told they had heart disease (any type), hypertension, or stroke than those with either private insurance or who were uninsured.

- Among adults 65 years and over, those covered by Medicaid and Medicare were more likely to have been told they had coronary heart disease, hypertension, or stroke than those with either Medicare alone or private insurance.
- Thirty-five percent of non-Hispanic black women had hypertension compared with 23% of non-Hispanic white women and 23% of Hispanic women. Twenty-nine percent of non-Hispanic black men had hypertension compared with 24% of non-Hispanic white men and 19% of Hispanic men. Non-Hispanic white men had the highest percentage of heart disease (any type) compared with other single race sex-ethnicity groups.

#### **Selected Respiratory Conditions (Tables 3,4)**

- Overall, 2% of adults 18 years of age and over had ever been told by a doctor or other health professional they had emphysema. Thirteen percent had ever been told they had asthma and 7% still had asthma. Eight percent of adults had been told in the past 12 months that they had hay fever, 13% had been told they had sinusitis, and 4% had been told they had chronic bronchitis.
- Women were more likely to have been told they had asthma, hay fever, sinusitis, or chronic bronchitis than were men. Men and women had similar prevalence of emphysema.
- When results are considered by single race without regard to ethnicity, Asian adults were less likely to

have been told in the past 12 months they had sinusitis or to have asthma (ever or still) than either black or white adults.

- Hispanic adults had lower rates of asthma, sinusitis, and chronic bronchitis than non-Hispanic white adults and non-Hispanic black adults. Hispanic adults were less likely to have been told in the past 12 months they had hay fever than were non-Hispanic white adults.
- Adults with a bachelor's degree or higher were less likely to have been told they had emphysema or chronic bronchitis compared with other education groups.
- Adults in poor families had higher percentages of emphysema, asthma, and chronic bronchitis than adults in families that were not poor. However, adults in families that were not poor had higher percentages of hay fever than adults in poor families.
- Among adults under age 65, those insured by Medicaid had higher percentages of emphysema, asthma, and chronic bronchitis than those with private insurance or who were uninsured. Among adults age 65 and over, those insured by Medicaid and Medicare had higher percentages of emphysema, asthma, and chronic bronchitis than those with only Medicare health care coverage.
- The percentage of adults with sinusitis was higher in the South than in any other region of the United States.
- Compared with other single race sex-ethnicity groups, white non-Hispanic women and black non-Hispanic women were the most likely to have sinusitis or chronic



bronchitis. Non-Hispanic white women were the most likely to have been told in the past 12 months that they had hay fever when compared with other single race sex-ethnicity groups.

### **Selected Cancers (Tables 5,6)**

- Overall, 8% of adults 18 years of age and over had ever been told by a doctor or other health professional they had some form of cancer.
- As age increased, the percentage of adults who had ever been told by a doctor or other health professional that they had cancer increased.
- When results are considered by single race without regard to ethnicity, white adults were more likely to have ever been told they had cancer when compared with black adults and Asian adults.
- Nine percent of non-Hispanic white adults had ever been told they had some form of cancer compared with 4% of non-Hispanic black adults and 4% of Hispanic adults.
- When considering single race sex-ethnicity groups, non-Hispanic white women and men had the highest overall percentages of ever having been told by a doctor or other health professional that they had cancer.

**Diabetes, Ulcers, Kidney Disease, Liver Disease, and  
Arthritis and Chronic Joint Symptoms (Tables 7,8)**

- Overall, 8% of adults 18 years of age and over had ever been told by a doctor or other health professional that they had diabetes, 8% had ever been told they had an ulcer, 2% had been told in the past 12 months that they had kidney disease, and 1% had been told in the past 12 months that they had liver disease.
- Twenty-two percent of adults had ever been told by a doctor or other health care professional that they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia, and 27% had chronic joint symptoms (e.g., pain or stiffness in or around a joint in the past 30 days that began more than 3 months ago).
- Women were more likely to be diagnosed with arthritis or to have chronic joint symptoms than were men.
- Age was positively associated both with arthritis diagnosis and the presence of chronic joint symptoms. Fifty-four percent of adults 75 years of age and over had an arthritis diagnosis compared with 8% of adults 18–44 years of age; 44% of adults 75 years of age and over had chronic joint symptoms compared with 17% of adults 18–44 years of age.
- When results are considered by single race without regard to ethnicity, American Indian and Alaska Native adults as well as black adults had higher percentages of diabetes compared with white adults. Asian adults were less likely to have arthritis or chronic joint

symptoms than white adults, black adults, and American Indian or Alaska Native adults.

- When results are considered by single race and ethnicity, Hispanic adults and non-Hispanic black adults were more likely to have been told by a doctor or other health professional that they had diabetes compared with non-Hispanic white adults. Hispanic adults were less likely to have arthritis or chronic joint symptoms compared with non-Hispanic white adults and non-Hispanic black adults.
- There was an inverse relationship of diabetes with level of education: 12% of adults with less than a high school diploma had diabetes compared with 5% of adults with a bachelor's degree or higher. A similar pattern was seen for ulcers, kidney disease, liver disease, arthritis, and chronic joint symptoms.
- Adults in poor families were more likely to have ever been told by a doctor or other health professional they had diabetes, ulcers, kidney disease, arthritis, or chronic joint symptoms than were adults in families that were not poor.
- Among adults under age 65, those covered by Medicaid had higher percentages of diabetes, ulcers, kidney disease, liver disease, arthritis, and chronic joint symptoms than those covered by private insurance or who were uninsured. Among adults aged 65 and over, those covered by Medicaid and Medicare had higher percentages of diabetes, ulcers, kidney disease, arthritis, and chronic joint symptoms than those with private insurance or who had only Medicare health care coverage.

- When results are considered by sex and ethnicity, non-Hispanic white men and women were less likely to have been told they had diabetes than Hispanic or non-Hispanic black men and women. Hispanic men and women and non-Hispanic black men were less likely to have chronic joint symptoms than were non-Hispanic white men and women and non-Hispanic black women.

### **Pain (Tables 9,10)**

- During the 3 months prior to the interview, 14% of adults had experienced a migraine or severe headache, 14% had experienced pain in the neck area, 27% had experienced pain in the lower back, and 4% had experienced pain in the face or jaw area.
- Women were more likely to experience pain (in the form of migraines, neck pain, lower back pain, or face or jaw pain) than men. Women were twice as likely to experience migraines or severe headaches, or pain in the face or jaw, than men.
- The percent of persons experiencing migraines or severe headaches was inversely related to age. Seventeen percent of adults 18–44 years of age experienced a migraine or severe headache in the 3 months prior to the interview compared with 13% of adults 45–64 years of age, 6% of adults 65–74 years of age, and 3% of adults 75 years of age and over.
- Adults 18–44 years of age were less likely to have experienced pain in the lower back during the 3 months prior to the interview compared with older adults.

- When results are considered by single race without regard to ethnicity, Asian adults were less likely to have pain in the lower back compared with white adults, black adults, and American Indian or Alaska Native adults.
- Adults with a bachelor's degree or higher were less likely to have migraine headaches, neck pain, or lower back pain compared with adults who did not graduate from high school.
- Adults in poor and near poor families were more likely to experience migraine headaches, neck pain, lower back pain, or pain in the face or jaw in the 3 months prior to the interview than were adults in families that were not poor.
- Among adults under age 65, those covered by Medicaid were more likely to have migraine headaches, neck pain, lower back pain, or pain in the face or jaw than those with private insurance or those who were uninsured. Among adults age 65 and over, those covered by Medicaid and Medicare were more likely to have migraine headaches, neck pain, or lower back pain than those with private insurance or only Medicare health care coverage.

#### **Hearing and Vision Trouble, and Absence of Natural Teeth (Tables 11,12)**

- Overall, 15% of adults 18 years of age and over experienced some hearing difficulty without a hearing aid (defined as "a little trouble hearing," "moderate

trouble", "a lot of trouble," or "deaf"). Men were more likely to have experienced hearing trouble than were women.

- Eleven percent of the adult population experienced vision trouble (defined as trouble seeing, even with glasses or contact lenses). Women were more likely to have experienced vision trouble than men.
- Eight percent of the adult population in the United States had lost all their natural teeth.
- Age was positively associated with hearing difficulties (without a hearing aid), vision trouble (even with glasses or contact lenses), and the loss of all natural teeth; as age increased, the percentages of adults with these conditions also increased.
- When results are considered by single race without regard to ethnicity, Asian adults and black adults were less likely to have experienced some form of hearing difficulty (without a hearing aid) than were white adults.
- When results are considered by single race and ethnicity, 17% of non-Hispanic white adults experienced some form of hearing difficulty (without a hearing aid) compared with 9% of non-Hispanic black adults and 10% of Hispanic adults.
- Absence of all natural teeth was inversely associated with education; 16% of adults with less than a high school diploma had lost all their natural teeth compared with 3% of adults with a bachelor's degree or higher.
- Seventeen percent of adults in poor families experienced vision trouble (even with glasses or

contact lenses) compared with 9% of adults in families that were not poor. The poor and near poor were more likely to have lost all their natural teeth than those who were not poor.

- Among adults under age 65, those covered by Medicaid were more likely to have hearing trouble, vision trouble (even with glasses or contact lenses), or absence of all natural teeth compared with those with private insurance or no insurance. Among adults age 65 and over, those covered by Medicaid and Medicare were more likely to have vision trouble (even with glasses or contact lenses), or absence of all natural teeth, than those with only Medicare health care coverage or private insurance.
- Adults not living in an MSA were more likely to have hearing difficulty (without a hearing aid), vision trouble (even with glasses or contact lenses), or absence of all natural teeth compared with those living in a large MSA.
- When results are considered by sex and ethnicity, non-Hispanic white men were more likely to have had hearing trouble compared with other men or women.

**Feelings of Sadness, Hopelessness, Worthlessness, or That Everything is an Effort (Tables 13,14)**

- Overall, 12% of adults experienced feelings of sadness for all, most, or some of the time during the 30 days prior to the interview; 7% felt hopeless; 5% felt worthless; and 14% felt like everything was an effort

for all, most, or some of the time during the same time period.

- Fourteen percent of women felt sad for all, most, or some of the time during the 30 days prior to the interview compared with 10% of men. Women were also more likely to have feelings of hopelessness, worthlessness, or that everything is an effort during the 30 days prior to the interview than were men.
- When results are considered by single race and ethnicity, non-Hispanic white adults were less likely to have feelings of sadness all, most, or some of the time during the 30 days prior to the interview than either non-Hispanic black adults or Hispanic adults. Non-Hispanic black adults were more likely to feel that everything is an effort all, most, or some of the time during the 30 days prior to the interview than either non-Hispanic white adults or Hispanic adults.
- Level of education was inversely associated with feelings of sadness, hopelessness, worthlessness, or that everything is an effort; the highest percentage of adults with these feelings was for adults with less than a high school diploma, and those least likely to have these feelings were those with a bachelor's degree or higher.
- Adults in poor families were at least twice as likely as adults in families that were not poor to feel sad, hopeless, worthless, or that everything is an effort for all, most, or some of the time during the 30 days prior to the interview.
- Among adults under age 65, 29% of those who had Medicaid health care coverage experienced feelings of



sadness for all, most, or some of the time during the 30 days prior to the interview compared with 15% of those who were uninsured and 8% of those who had private health insurance. Adults under age 65 who had Medicaid health care coverage were nearly twice as likely to feel hopeless, worthless, or that everything is an effort for all, most, or some of the time during the 30 days prior to the interview than were adults under age 65 who were either uninsured or who had private health insurance.

- Among adults aged 65 and over, 26% of those who had Medicaid and Medicare health care coverage experienced feelings of sadness for all, most, or some of the time during the 30 days prior to the interview compared with 13% of those who had only Medicare health care coverage and 10% of those who had private health insurance. Adults aged 65 and over who had Medicaid and Medicare health care coverage were at least two times as likely to feel everything is an effort for all, most, or some of the time during the 30 days prior to the interview as those who had private health insurance or only Medicare health care coverage.
- Divorced or separated adults were more likely to have feelings of sadness, hopelessness, worthlessness, or that everything is an effort compared with adults who were married or adults who have never married.

### **Feelings of Nervousness or Restlessness (Tables 15,16)**

- Overall, 17% of adults experienced feelings of nervousness and 19% of adults experienced feelings of restlessness for all, most, or some of the time during the 30 days prior to the interview.
- Nineteen percent of women felt nervous for all, most, or some of the time during the 30 days prior to the interview compared with 14% of men. Similarly, women were more likely to feel restless all, most, or some of the time during the 30 days prior to the interview than were men.
- When results are considered by single race and ethnicity, non-Hispanic white adults had higher percentages of nervousness or restlessness compared with non-Hispanic black adults and Hispanic adults.
- Level of education was inversely associated with feelings of nervousness; the highest percentage of adults with these feelings were adults with less than a high school diploma, and those least likely to have these feelings were those with a bachelor's degree or higher.
- Adults in poor families were more likely than adults in families that were not poor to feel nervous or restless for all, most, or some of the time during the 30 days prior to the interview.
- Among adults under age 65, 30% of those who had Medicaid health care coverage experienced feelings of nervousness for all, most, or some of the time during

the 30 days prior to the interview compared with 18% of those who were uninsured and 15% of those who had private health insurance. Adults under age 65 who had Medicaid health care coverage were more likely to experience feelings of restlessness for all, most, or some of the time during the 30 days prior to the interview than those adults under age 65 who were either uninsured or who had private health insurance.

- Among adults aged 65 years and over, 30% of those who had Medicaid and Medicare health care coverage experienced feelings of nervousness for all, most, or some of the time during the 30 days prior to the interview compared with 14% of those who had only Medicare health care coverage or 12% of those who had private health insurance. Adults age 65 and over who had Medicaid and Medicare health care coverage were more likely to experience feelings of restlessness for all, most, or some of the time during the 30 days prior to the interview than were adults age 65 and over who had only Medicare health care coverage or private health insurance.
- Adults who were married were the least likely to have feelings of nervousness or restlessness compared with adults who were divorced or separated, never married, or living with a partner.
- Adults who did not live in a MSA were more likely to have feelings of restlessness when compared to adults who lived in a MSA (large or small).

### **Work-loss Days and Bed Days (Table 17)**

- Employed adults 18 years of age and over experienced an average of 4 work-loss days per person due to illness or injury in the past 12 months, for a total of approximately 698 million work-loss days.
- Adults 18 years of age and over experienced an average of 5 bed days per person due to illness or injury in the past 12 months, for a total of 1 billion bed days.
- Women experienced an average of 5 bed days per person due to illness or injury in the past 12 months compared with an average of 4 bed days per person for men.
- When results are considered by single race and ethnicity, non-Hispanic black adults had an average of 5 bed days per person due to illness or injury in the past 12 months compared with an average of 4 bed days per person for Hispanic adults.
- Adults with less than a high school diploma had an average of 8 bed days per person due to illness or injury in the past 12 months compared with 3 bed days per person for adults with at least a bachelor's degree.
- Adults in poor families averaged 10 bed days per person due to illness or injury in the past 12 months compared with 3 bed days per person among adults in families that were not poor.
- Among adults under age 65, those who had Medicaid health care coverage averaged 13 bed days per person

due to illness or injury in the past 12 months compared with 3 bed days per person for those who had private health insurance and 4 bed days per person for those who were uninsured. Among adults at least 65 years of age, those with Medicaid and Medicare health care coverage had 22 bed days per person compared with 5 bed days per person for those with private insurance and 6 bed days per person for those with only Medicare health care coverage.

- Adults who were divorced or separated had 8 bed days per person due to illness or injury in the past 12 months compared with 4 bed days per person for those who were married, 4 bed days per person for those who were living with a partner, and 4 bed days per person for those who were never married. Employed adults who were divorced or separated also had higher rates of work-loss days than employed adults who were married, living with a partner, or who were never married.

#### **Limitations in Physical Functioning (Tables 18,19)**

- Overall, 14% of adults had great difficulty with at least one of nine physical activities performed without help and without the use of special equipment (responding "very difficult to do" or "can't do at all" to walking a quarter of a mile; climbing 10 steps without resting; standing for 2 hours; sitting for 2 hours; stooping, bending or kneeling; reaching over the head; using the fingers to grasp or handle small objects; lifting or carrying 10 pounds; or pushing or pulling large objects).

- Only 2% of adults had difficulty grasping or handling small objects; 9% had difficulty standing for 2 hours; 8% had difficulty stooping, bending or kneeling; 7% had difficulty walking a quarter of a mile; 6% had difficulty pushing or pulling large objects; and 5% had difficulty climbing 10 steps without resting.
- Seventeen percent of women had at least one physical difficulty compared with 11% of men.
- Age was positively associated with the presence of at least one physical difficulty; as age increased, the percentage of adults finding at least one of these activities very difficult or impossible to do also increased. The percentage of adults with this level of difficulty in each of the nine activities increased sharply both at age 65 and at age 75 and over.
- When results are considered by single race without regard to ethnicity, 17% of black adults had at least one physical difficulty compared with 14% of white adults and 7% of Asian adults.
- When results are considered by single race and ethnicity, a higher percentage of non-Hispanic black adults found at least one of the nine physical activities very difficult or impossible to do, compared with non-Hispanic white adults and Hispanic adults.
- Level of education was inversely associated with difficulty in any and in each of the nine activities; as education increased, the percentage of adults with difficulty performing the nine physical activities decreased.

- Adults in poor families were more than twice as likely to have difficulty with each of the nine activities as were adults in families that were not poor.
- For adults less than 65 years of age, those with Medicaid health care coverage were nearly three times as likely to have at least one physical difficulty compared with adults with private insurance and adults who were uninsured. Similarly for adults at least 65 years of age, 58% of those with Medicaid and Medicare health care coverage reported at least one physical difficulty compared with 35% of those with private insurance and 35% of those with only Medicare health care coverage.
- When results are considered by single race, sex, and ethnicity, non-Hispanic black women were more likely to find at least one of the nine physical activities very difficult or impossible to do, compared with Hispanic men, non-Hispanic white men and women, and non-Hispanic black men.

#### **Respondent-assessed Health Status (Tables 20,21)**

- Overall, 61% of adults 18 years of age and over were in excellent or very good health, 26% were in good health, and 13% were in fair or poor health.
- Health status was inversely associated with age; as age increased the percentage of adults with excellent health or very good health decreased, and the percentage of adults with fair or poor health increased.

- When results are considered by single race without regard to ethnicity, 43% of American Indian or Alaska Native adults had excellent or very good health compared with 51% of black adults, 63% of white adults, and 65% of Asian adults.
- When considering results by single race and ethnicity, non-Hispanic white adults were more likely to have excellent or very good health and were less likely to have fair or poor health than either non-Hispanic black or Hispanic adults.
- Level of education was positively associated with health status; 76% of adults with a bachelor's degree or higher were in excellent or very good health compared with 40% of adults with less than a high school diploma. Twenty-six percent of adults with less than a high school diploma were in fair or poor health compared with 5% of adults with a bachelor's degree or higher.
- Adults in families that were not poor were more likely to have excellent or very good health compared with adults in poor and near poor families, and adults in near poor and poor families were two to three times as likely to have fair or poor health compared with adults in families that were not poor.
- Among adults under age 65 years, 73% of those with private health insurance had excellent or very good health compared with 58% of adults under age 65 without health insurance coverage and 36% of adults under age 65 with Medicaid health care coverage. Only 6% of adults under age 65 with private health insurance were in fair or poor health compared with



13% of those without health insurance coverage and 33% of those with Medicaid health care coverage.

- Among adults age 65 and over, 52% of those who had Medicaid and Medicare health care coverage had fair or poor health compared with 27% of those with only Medicare health care coverage and 20% of those with private health insurance.
- Married adults were less likely to have fair or poor health compared with adults who were widowed, divorced or separated, never married, or were living with a partner.
- Adults who did not live in an MSA were more likely to have fair or poor health than adults who lived in a large or small MSA.
- Sixty-four percent of non-Hispanic white women were in excellent or very good health compared with 49% of non-Hispanic black women and 48% of Hispanic women. Conversely, only 12% of non-Hispanic white women were in fair or poor health compared with 19% of Hispanic women and 20% of non-Hispanic black women. Similarly, 66% of non-Hispanic white men were in excellent or very good health compared with 56% of Hispanic men and 54% of non-Hispanic black men. Only 11% of non-Hispanic white men were in fair or poor health compared with 15% of Hispanic men and 17% of non-Hispanic black men.

### **Current Health Status Relative to Health Status 1 Year Ago (Tables 22,23)**

- Among adults with excellent or very good health in 2008, the health of 77% was about the same as a year ago and the health of 20% had improved. Among adults with good health in 2008, the health of 71% was about the same as a year ago, the health of 20% had improved, and the health of 10% was worse than in 2007. Among adults with fair or poor health in 2008, the health of 54% was about the same as a year ago, the health of 18% had improved, and the health of 28% was worse than last year.

### **Current Cigarette Smoking Status (Tables 24,25)**

- Overall, 21% of adults 18 years of age and over were current cigarette smokers, 21% were former smokers, and 58% had never smoked at least 100 cigarettes in their lifetime. Twenty-three percent of men were current smokers compared with 19% of women. Sixty-three percent of women had never smoked compared with 53% of men.
- As age increased, the percentage of current smokers decreased. Adults who were 18–44 years of age were more likely to have never smoked than adults 45 years of age and over.
- When results are considered by single race without regard to ethnicity, 10% of Asian adults were current smokers compared with 21% of black adults, 21% of

white adults, and 23% of American Indian or Alaska Native adults.

- Fifty-four percent of non-Hispanic white adults had never smoked compared with 64% of non-Hispanic black adults and 68% of Hispanic adults.
- Hispanic adults were about half as likely to be every day smokers compared with non-Hispanic white and non-Hispanic black adults. However, Hispanic adults were more likely to be some day smokers than were non-Hispanic white adults.
- Adults with at least a bachelor's degree were less likely than other adults to be current smokers and more likely to have never smoked.
- Adults in families that were not poor were less likely to be current smokers and more likely to be former smokers than adults in families that were near poor or poor.
- Among adults under 65 years of age, 18% with private health insurance coverage were current smokers compared with 33% who were uninsured and 37% who had Medicaid health care coverage. In addition, adults under 65 years of age who had private health insurance coverage were more likely to have never smoked than adults in this age group who were uninsured or who had Medicaid health care coverage.
- Adults living in the West were more likely to have never smoked compared with adults living in other regions.
- Ten percent of Hispanic women were current smokers compared with 17% of non-Hispanic black women and 22% of non-Hispanic white women. Seventy-nine percent of

Hispanic women had never smoked compared with 70% of non-Hispanic black women and 57% of non-Hispanic white women. Among men, 19% of Hispanic men were current smokers compared with 24% of non-Hispanic white men and 25% of non-Hispanic black men; 57% of Hispanic men and 56% of non-Hispanic black men had never smoked compared with 50% of non-Hispanic white men.

### **Alcohol Drinking Status (Tables 26,27)**

- Overall, 50% of adults 18 years of age and over were current regular drinkers, 14% were current infrequent drinkers, 6% were former regular drinkers, 9% were former infrequent drinkers, and 21% were lifetime abstainers.
- Sixty percent of men were current regular drinkers compared with 42% of women. Men were also more likely to be former regular drinkers than were women. Women were more likely to be current or former infrequent drinkers or lifetime abstainers than were men.
- As age increased, the percentage of adults who were current regular drinkers decreased.
- Asian adults were more likely to be lifetime abstainers compared with other single race groups (excluding Native Hawaiian or Other Pacific Islander).
- When results are considered by single race and ethnicity, 56% of non-Hispanic white adults were current regular drinkers compared with 42% of Hispanic adults and 37% of non-Hispanic black adults. Hispanic adults and non-Hispanic black adults were almost twice

as likely as non-Hispanic white adults to be lifetime abstainers.

- Educational attainment and family income were positively associated with current regular drinking status and inversely associated with being a lifetime abstainer.
- Among adults under 65 years of age, 59% of those who had private health insurance coverage were current regular drinkers compared with 51% of those who were uninsured and 31% of those who had Medicaid health care coverage.
- Among adults aged 65 and over, 36% of those who had private health insurance coverage were current regular drinkers compared with 29% of those who had only Medicare health care coverage and 11% of those who had Medicaid and Medicare health care coverage.
- Adults who were living with a partner were more likely to be current regular drinkers compared with other marital status categories.
- Regionally, 47% of adults living in the South were current regular drinkers, in contrast to 51% in the West, 53% in the Midwest, and 54% in the Northeast.
- Twenty percent of non-Hispanic white women were lifetime abstainers compared with 38% of non-Hispanic black women and 46% of Hispanic women. Conversely, 48% of non-Hispanic white women were current regular drinkers compared with 27% of non-Hispanic black women and 27% of Hispanic women. Among men, 12% of non-Hispanic white men were lifetime abstainers compared with 18% of Hispanic men and 21% of non-Hispanic black men; 63% of non-Hispanic white men were current

regular drinkers compared with 56% of Hispanic men and 49% of non-Hispanic black men.

**Leisure-time Physical Activity Status and Frequency of Vigorous Leisure-time Physical Activity (Tables 28,29)**

- When considering all leisure-time physical activity, 36% of adults were considered inactive, 31% of adults had some leisure-time physical activity, and 33% of adults engaged in leisure-time physical activity on a regular basis. Regarding vigorous leisure-time physical activity, 59% of adults 18 years of age and over never engaged in any periods of vigorous leisure-time physical activity lasting 10 minutes or more per week, and 26% engaged in such activity three or more times per week.
- Regarding all leisure-time physical activity, women were more inactive than men and men engaged in leisure-time physical activity on a regular basis more often than women. Regarding vigorous leisure-time physical activity, 53% of men never engaged in periods of vigorous leisure-time physical activity lasting 10 minutes or more per week compared with 64% of women. Twenty-nine percent of men engaged in such activities three or more times per week compared with 23% of women.
- When all leisure-time physical activity is considered by single race and ethnicity, non-Hispanic white adults were more active than Hispanic adults or non-Hispanic black adults. Regarding vigorous leisure-

time physical activity, 55% percent of non-Hispanic white adults never engaged in periods of vigorous leisure-time physical activity compared with 66% of non-Hispanic black adults and 69% of Hispanic adults. Twenty-eight percent of non-Hispanic white adults engaged in such activities three or more times per week compared with 20% of non-Hispanic black adults and 19% of Hispanic adults.

- Eighty percent of adults with less than a high school diploma never engaged in periods of vigorous leisure-time physical activity compared with 43% of adults with a bachelor's degree or higher. Seventy-two percent of adults in poor families never engaged in periods of vigorous leisure-time physical activity compared with 52% of adults in families that were not poor. Thirty-eight percent of adults with a bachelor's degree or higher engaged in vigorous leisure-time physical activity three or more times a week compared with 12% of adults with less than a high school diploma. Thirty percent of adults in families that were not poor engaged in vigorous leisure-time physical activity three or more times a week compared with 17% of those in poor families.
- Regarding overall leisure-time physical activity status, adults living in a MSA were less likely to be inactive and more likely to engage in leisure-time physical activity on a regular basis than were adults who did not live in a MSA. A higher percentage of adults who did not reside in an MSA had never engaged in periods of vigorous leisure-time physical activity

lasting 10 minutes or more per week compared with adults who resided in an MSA.

- When considering overall leisure-time physical activity, adults living in the South were more likely to be inactive compared to adults living in other regions. A greater percentage of adults in the South and the Northeast never engaged in any periods of vigorous leisure-time physical activity lasting 10 minutes or more per week compared with adults living in other regions.

#### **Body Mass Index (Tables 30,31)**

- Based on their body mass index, 2% of adults 18 years of age and over were underweight, 37% were at a healthy weight, 35% were overweight (but not obese), and 27% were obese.
- Forty-two percent of women were at a healthy weight compared with 31% of men. Forty-two percent of men were overweight (but not obese) compared with 28% of women. Women were at least two times as likely to be underweight than were men. Obesity percentages were similar between men and women.
- When results are considered by single race without regard to ethnicity, 55% of Asian adults were at a healthy weight compared with 37% of white adults, 29% of American Indian or Alaska Native adults, and 29% of black adults. Black adults and American Indian or Alaska Native adults were about 3–4 times as likely to



be obese as Asian adults. White adults were about three times as likely as Asian adults to be obese.

- When results are considered by single race and ethnicity, 36% of non-Hispanic black adults were obese compared with 31% of Hispanic adults and 26% of non-Hispanic white adults. Hispanic adults were more likely to be overweight (but not obese) than either non-Hispanic white or non-Hispanic black adults.
- Educational attainment was positively associated with a healthy weight and inversely associated with being obese.
- Thirty-eight percent of adults under age 65 who had Medicaid health care coverage were obese compared with 26% of those who had private health insurance and 28% of those who were uninsured.
- Adults who did not live in an MSA were more likely to be obese than adults who lived in an MSA.
- Obesity percentages were highest in the Midwest and the South.
- Forty-six percent of non-Hispanic white women were at a healthy weight compared with 33% of Hispanic women and 28% of non-Hispanic black women; 31% of non-Hispanic white men, 31% of non-Hispanic black men, and 25% of Hispanic men were at a healthy weight. Forty-two percent of non-Hispanic black women were obese compared with 33% of Hispanic women and 25% of non-Hispanic white women; 30% of Hispanic men, 29% of non-Hispanic black men, and 26% of non-Hispanic white men were obese.

### **Usual Place of Health Care (Tables 32,33)**

- Overall, 16% of adults 18 years of age and over were without a usual place of health care. Of those with a usual place of care, 77% considered a doctor's office or HMO to be their usual place of health care, 20% considered a clinic or health center to be their usual place of health care, and 3% considered a hospital emergency room or outpatient department to be their usual place of health care.
- Twenty-one percent of men were without a usual place of health care compared with 11% of women. Of those with a usual place of care, men were more likely to consider a hospital emergency room or outpatient department to be their usual place of health care than were women.
- Among adults, not having a usual place of health care was inversely related to age; as age increased, the percentage of adults without a usual place of health care decreased.
- When results are considered by single race and ethnicity, 26% of Hispanic adults did not have a usual place of health care compared with 16% of non-Hispanic black adults and 13% of non-Hispanic white adults. Of those adults with a usual place of health care, 80% of non-Hispanic white adults considered a doctor's office or an HMO to be their usual place of health care compared with 74% of non-Hispanic black adults and 63% of Hispanic adults. Two percent of non-Hispanic white adults who had a usual place of health care considered

- a hospital emergency room or outpatient department their usual place of health care, compared with 5% of Hispanic adults and 6% of non-Hispanic black adults.
- Adults with higher educational attainment and higher family income were more likely to have a usual place of health care and to consider a doctor's office or HMO as their usual place of health care than those with lower educational attainment and family income.
  - Among adults under 65 years of age, 48% of those who were uninsured did not have a usual place of health care compared with 11% of those adults with private health care coverage and 10% of those adults with Medicaid health care coverage.
  - Among adults aged 65 and over with a usual place of health care, 23% of those who had Medicaid and Medicare health care coverage considered a clinic or health center their usual place of health care compared with 12% of those who had private health insurance and 12% of those who had only Medicare health care coverage.
  - Of those adults with a usual place of health care, adults who did not live in an MSA were more likely to consider a health center or clinic their usual place of health care than were adults living in an MSA.
  - Eighteen percent of adults living in the South and 17% of adults living in the West were without a usual place of health care compared with 14% in the Midwest and 11% in the Northeast.
  - Thirty-three percent of Hispanic men did not have a usual place of health care compared with 21% of non-Hispanic black men and 17% of non-Hispanic white men.

Eighteen percent of Hispanic women were without a usual place of health care compared with 12% of non-Hispanic black women and 9% of non-Hispanic white women.

**Number of Office Visits to a Doctor or other Health Professional in the past 12 months (Tables 34,35)**

- Overall, 19% of adults 18 years of age and over did not make an office visit to a doctor or other health professional in the past 12 months, 17% had one office visit, 27% had 2–3 visits, 24% had 4–9 visits, and 14% had 10 or more visits.
- Twenty-six percent of men and 12% of women had no office visits to a doctor or other health professional in the past 12 months.
- When results are considered by single race and ethnicity, 29% of Hispanic adults had no visits to a doctor or other health professional in the past 12 months compared with 19% of non-Hispanic black adults and 17% of non-Hispanic white adults. Hispanic adults were also less likely to have made 2–9 office visits in the past 12 months compared with non-Hispanic black and non-Hispanic white adults.
- Office visits to a doctor or other health professional in the past 12 months were inversely related to the level of education; 28% of adults with less than a high school diploma had no office visits compared with 12% of adults with at least a bachelor's degree.

- Adults in families that were not poor were more likely to have had an office visit to a doctor or other health professional in the past 12 months compared with other adults. Adults in families that were poor were more likely to have made 10 or more office visits to a doctor or other health professional in the past 12 months than were adults who were not poor.
- Among adults under 65 years of age, 47% who were uninsured had no visits to a doctor or other health professional in the past 12 months compared with 16% with private health care coverage and 14% with Medicaid health care coverage. Adults in this age group who were covered by Medicaid or other forms of insurance were more likely to have 10 or more office visits in the past 12 months than those with private insurance or who were uninsured.
- Ten percent of adults aged 65 and over with only Medicare health care coverage had no visits to a doctor or other health professional in the past 12 months compared with 4% of those with private health insurance coverage. Adults in this age group who were covered by Medicaid and Medicare were more likely to have 10 or more office visits in the past 12 months than those with private or only Medicare health care coverage.
- Twenty-two percent of adults who lived in the West had no visits to a doctor or other health professional in the past 12 months compared with 19% of adults in the South, 18% of adults in the Midwest and 15% of adults in the Northeast.

- Thirty-eight percent of Hispanic men did not visit a doctor or other health professional in the past 12 months compared with 26% of non-Hispanic black men and 23% of non-Hispanic white men. Twenty percent of Hispanic women did not visit a doctor or other health professional in the past 12 months compared with 13% of non-Hispanic black women and 10% of non-Hispanic white women.

**Length of Time Since Last Contact with a Doctor or Other Health Professional (Tables 36,37)**

- Overall, 68% of adults 18 years of age and over last contacted a doctor or other health professional within the previous 6 months; 14% last contacted a doctor or other health professional more than 6 months ago, but not more than 1 year ago; 8% last contacted a doctor or other health professional more than 1 year ago, but not more than 2 years ago; 6% last contacted a doctor or other health professional more than 2 years ago but not more than 5 years ago; and 3% last contacted a doctor or other health professional more than 5 years ago. One percent of adults had never contacted a doctor or other health professional.
- Seventy-five percent of women and 61% of men last contacted a doctor or other health professional within the previous 6 months. Men were more likely to have last contacted a doctor a year or more ago, as well as to have never contacted a doctor, than were women.

- Older adults (aged 65 and over) were more likely to have had more recent contact (within the past 6 months) with a doctor or other health professional than were younger adults (under 65 years of age).
- When results are considered by single race and ethnicity, Hispanic adults were less likely to have had more recent contact (within the past 6 months) with a doctor or other health professional than either non-Hispanic white adults or non-Hispanic black adults. Hispanic adults were approximately two times as likely to have never had contact with a doctor or other health professional as non-Hispanic black adults, and at least five times as likely to have never had contact with a doctor or other health professional than were non-Hispanic white adults.
- Adults with less than a high school diploma were less likely to have last seen a doctor within the last 6 months, and were more likely to have never seen a doctor, than adults with more education.
- Adults in families that were not poor were more likely to have had more recent contact (within the past 6 months) with a doctor or other health professional than adults in poor or near poor families.
- Adults under 65 years of age who were uninsured were much less likely to have last contacted a doctor or other health professional within the previous 6 months than were insured adults.
- Hispanic men were less likely to have seen a doctor or other health professional within the previous six months compared with non-Hispanic black and non-Hispanic white men; 5% of Hispanic men had never seen

or talked to a doctor or other health professional compared with 2% of non-Hispanic black men and 1% of non-Hispanic white men. Among women, Hispanic women were less likely to have had contact with a doctor in the last six months compared with non-Hispanic black and non-Hispanic white women.

**Length of Time Since Last Contact with a Dentist or Other Dental Health Professional (Tables 38,39)**

- Overall, 42% of adults 18 years of age and over last contacted a dentist or other dental health professional within the previous 6 months; 17% more than 6 months ago, but not more than 1 year ago; 13% more than 1 year ago, but not more than 2 years ago; 13% more than 2 years ago, but not more than 5 years ago; and 14% last contacted a dentist or other dental health professional more than 5 years ago. One percent of adults had never contacted a dentist or other dental health professional.
- Forty-five percent of women last contacted a dentist or other dental health professional within the previous 6 months compared with 39% of men.
- When results are considered by single race and ethnicity, non-Hispanic white adults were more likely to have contacted a dentist or other dental health professional within the previous 6 months (47%) than either non-Hispanic black adults (31%) or Hispanic adults (29%). Four percent of Hispanic adults had never contacted a dentist compared with 2% of non-



Hispanic black adults and 1% of non-Hispanic white adults.

- Adults with higher educational attainment and higher family income were considerably more likely to have contacted a dentist or other dental health professional in the last 6 months than were those with lower educational attainment and lower family income.
- Among adults under 65 years of age, 51% of adults with private health care coverage had contact with a dentist or other dental health professional within the past 6 months compared with 30% of adults with Medicaid health care coverage and 18% of adults who were uninsured.
- Among adults aged 65 years and over, 51% of adults with private health care coverage had contact with a dentist or other dental professional within the past 6 months compared with 38% of adults who had only Medicare health care coverage and 19% of adults who had Medicaid and Medicare health care coverage.
- Married adults were more likely to have had more recent dental contact (6 months or less) compared with other marital status categories.
- Adults who did not live in an MSA were less likely to have had contact with a dentist or other dental health professional within the past 6 months than adults who lived in an MSA.

## **HIV Testing Status (Tables 40,41)**

- Overall, 40% of adults 18 years of age and over had ever been tested for HIV.
- Women were more likely to have ever been tested for HIV than were men.
- HIV testing status was inversely related to age; 51% of adults aged 18–44 had ever been tested for HIV compared with 35% of those aged 45–64, 17% of those aged 65–74, and 7% of those aged 75 and over.
- When considering results by single race without regard to ethnicity, 56% of black adults had ever been tested for HIV compared with 47% of American Indian or Alaska Native adults, 37% of white adults, and 33% of Asian adults.
- When considering results by single race and ethnicity, 55% of non-Hispanic black adults had ever been tested for HIV compared with 41% of Hispanic adults and 37% of non-Hispanic white adults.
- A higher percentage of adults who had some college and those with at least a bachelor's degree, had ever been tested for HIV compared with adults with less education.
- Among adults under age 65, 56% of those who had Medicaid health care coverage had ever been tested for HIV compared with 45% who were uninsured and 44% of those who had private health insurance.
- Fifty-one percent of those who were divorced or separated and 50% of those who were living with a partner had ever been tested for HIV compared with 41% of married adults and 34% of never married adults.

- Adults who did not live in an MSA or resided in a small MSA were less likely to have ever been tested for HIV than adults who lived in a large MSA.
- Adults who lived in the South were more likely to have ever been tested for HIV than adults who lived in other regions.
- Fifty-five percent of non-Hispanic black women had ever been tested for HIV compared with 46% of Hispanic women and 39% of non-Hispanic white women. Fifty-six percent of non-Hispanic black men had ever been tested for HIV compared with 37% of Hispanic men and 35% of non-Hispanic white men.

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## **Appendix I**

### **Technical Notes on Methods**

This report is one of a set of statistical reports published by the staff of the National Center for Health Statistics (NCHS). It is based on data contained in the 2008 in-house Sample Adult and Person files, which are derived from the Sample Adult and Family Core components of the National Health Interview Survey. All estimates were weighted using the Sample Adult Record Weight and the in-house data file. The detailed sample design information was used to produce the most accurate variance estimates possible. Analysts should note that estimates and variances may differ depending on the weight used.

All data used in the report are also available from the public-use data files with the exception of some more detailed information on race and Hispanic or Latino origin and on the sample design. Detailed sample design variables and detailed information on race and Hispanic or Latino origin cannot be made available on the public-use file due to potential disclosure of confidential information. Standard errors produced by using the SUDAAN statistical package are shown for all percentages in the tables (19). Standard errors for frequencies are calculated but not shown in the tables. Percentages and frequencies with relative standard errors greater than 30% but less than or equal to 50% are considered unreliable and are indicated with an asterisk (\*). Estimates with a relative standard error of greater than 50% are replaced with a dagger (†)

and are not shown. The relative standard errors are calculated as follows:

$$\text{Relative standard error} = (SE/Est)100,$$

where *SE* is the standard error of the estimate, and *Est* is the estimate (percentage or frequency). The reliability of frequencies and their corresponding percentages is determined independently, so it is possible for a particular frequency to be reliable and its associated percentage unreliable, and vice versa.

### **Age adjustment**

Unless otherwise specified, percentages shown in Tables 1-41 were age adjusted to the projected 2000 U.S. population as the standard population provided by the U.S. Census Bureau (17,18). Age adjustment was used to allow comparison among various population subgroups that have different age structures. This is particularly important for demographic characteristics such as race and ethnicity, education, and marital status. It is also helpful for other characteristics.

Age-adjusted rates are calculated by the direct method as follows:

$$Est = \frac{\sum_{i=1}^n r_i p_i}{\sum_{i=1}^n p_i},$$



where  $r_i$  = rate in age group  $i$  in the population of interest,

$p_i$  = standard population in age group  $i$ ,

$n$  = total number of age groups used for age adjustment, and

$Est$  = the age-adjusted rate.

The standard age distribution used for age adjusting estimates from the NHIS is the 2000 projected U.S. population as the standard population. Table I shows the age distributions used to perform age adjustment. For all tables, the age groups used to age adjust estimates were 18–44, 45–64, 65–74, and 75 years and over unless otherwise noted. See Table I for age distribution and age-adjustment weights used in age-adjusting data. Health insurance and education are restricted to certain age groups, and are therefore adjusted accordingly (for age groups used, see relevant footnotes on the tables). Using different age groups for age adjustment may result in slightly different estimates. For this reason, age-adjusted estimates for health characteristics in this report may not match age-adjusted estimates for the same health characteristics in other reports. Unadjusted estimates were also calculated and are provided in Tables IV–XXIII in Appendix III.

For more information on the derivation of age-adjustment weights for use with NCHS survey data, see Klein and Schoenborn (18). That report is available through the NCHS home page at

<http://www.cdc.gov/nchs/data/statnt/statnt20.pdf>. The year

2000 projected U.S. resident population is available through the U.S. Census Bureau home page at <http://www.census.gov/prod/1/pop/p25-1130/p251130.pdf>.

### **Treatment of Unknown Values**

In the tables, all unknown values (responses coded as "refused," "don't know," or "not ascertained") with respect to each table's variables of interest were removed from the denominators when calculating row percentages. In most instances, the overall number of unknowns is quite small and would not support disaggregation by the demographic characteristics included in the table. Because these unknowns are not shown separately, users calculating their own percentages based on the frequencies and population counts presented in the tables may obtain slightly different results. To aid users' understanding of the data, weighted counts and percentages of unknowns (with respect to the variables of interest in each table) are shown in Table II.

Unknowns with respect to the demographic characteristics used in each table are not shown due to small cell counts. However, unknowns for both family income and poverty status typically include a sizable number of persons regardless of the health outcome shown in the table. Missing data on family income and personal earnings in the NHIS have been imputed by NCHS analysts using multiple-imputation methodology. Five ASCII data sets containing imputed values for the survey year and additional information about the imputed income files can be found at <http://www.cdc.gov/nchs/nhis.htm>. However, income and poverty estimates in this publication are based

only on reported income and may differ from other measures that are based on imputed data (which were not available when this report was prepared). Because it is difficult to interpret the relationship between "unknown" income (or poverty status) and the health outcomes displayed in the tables, counts of persons in these unknown categories are not shown in the tables. Table III shows weighted counts (in thousands) and weighted percentages of adults with unknown values for poverty status and family income, education, health insurance, and marital status.

The Income and Assets section in the Family Core of the NHIS instrument allows respondents to report their family income in several ways. Respondents are first asked to provide their family's total combined income before taxes from all sources for the previous calendar year in a dollar amount (from \$0 up to \$999,995). Any family income responses greater than \$999,995 are entered as \$999,996. From 1997 to 2006, respondents who did not know or refused to state an amount were then asked if their family's combined income in the previous calendar year was \$20,000 or more, or less than \$20,000. If they again refused to answer or said that they do not know, they were not asked any more questions about their family income. Respondents who replied to the "above-below \$20,000" question were then handed a list of detailed income categories (top-coded at \$75,000 or more) and were asked to pick the interval containing their best estimate of their combined family income.

However, starting with survey year 2007, the income follow-up questions were changed. Modifications in the 1997–2006 income follow-up questions were explored because the 1997–2006 income follow-up questions had not

appreciably increased the analytic usability of family income data or of the poverty ratio in the NHIS. During the second quarter of 2006, a portion of the NHIS sample participated in a field test that evaluated an alternative way to ask respondents about family income in an attempt to decrease the frequency of unknown responses to family income and poverty status variables in the NHIS. Based on the results of the 2006 field test, the NHIS family income questions were modified starting with the first quarter of 2007.

In the 2008 NHIS, respondents who did not know or refused to state an income amount were asked if their family's combined income in the previous calendar year was \$50,000 or more or less than \$50,000. If they again refused to answer, or said that they did not know, they were not asked any more questions about their family's income. If the respondent indicated that the family's income was less than \$50,000, at most two additional follow-up questions were asked: a) if the family income was less than (or at least) \$35,000, and b) if the family income was less than \$35,000, whether or not the family income was less than the poverty threshold. The family's poverty threshold was pre-filled by the CAPI instrument using information collected earlier in the interview on the family's size.

If the respondent initially indicated that the family income was \$50,000 or more, at most two additional follow-up questions were asked: a) if the family income was less than (or at least) \$100,000, and, if the family income was less than \$100,000, b) if the family income was less than (or at least) \$75,000.

NHIS respondents thus fall into one of four categories with respect to income information: those who supplied a dollar amount (77% of sample adults in 2008), those who indicated a range for their income by answering all of the applicable follow-up questions (15% of sample adults), those who indicated a less precise range for their family's income by only answering some of the applicable follow-up questions (3% of sample adults), and those who provided no income information (5% of sample adults) (unweighted results).

Respondents who stated that their family income was below \$35,000 are included in the "Less than \$35,000" category under "Family Income" in the tables in this report, along with respondents who gave an income range that was less than \$35,000. Likewise, respondents who stated that their family income was at or above \$35,000 are included in the "\$35,000 or more" category under Family Income, along with those respondents who gave an income range that was \$35,000 or more. Users will note that the counts for the detailed (indented) amounts do not sum to the count shown for "\$35,000 or more" for this reason.

A poverty status variable was created for all respondents. Poverty status is the ratio of the family income in the previous calendar year to the appropriate 2007 poverty threshold (given the family size and number of children) defined by the U.S. Census Bureau (15). Different poverty thresholds were used in the creation of the poverty ratios for respondents who provided a dollar amount and respondents who specified only an income category in the follow-up questions. In a small number of cases (less than 0.5%), there may be inconsistencies in the categorical assignment of families in the detailed poverty ratio

variables, reflecting the source of the income information. For further information, data users should consult the 2008 NHIS Survey Description Document

([ftp://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Dataset\\_Documentation/NHIS/2008/srvydesc.pdf](ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/NHIS/2008/srvydesc.pdf)).

Adults who are categorized as "poor" had a ratio less than 1.0; that is, their family income was strictly below the poverty threshold. The "near poor" category includes those adults with incomes of 100% to less than 200% of the poverty threshold. Lastly, "not poor" adults have incomes that are 200% of the poverty threshold or greater. The remaining groups of respondents—those who did not supply sufficient income information in the follow-up questions to categorize as a three-category poverty status variable, as well as those who did not provide any income information—are, by necessity, coded as "unknown" with respect to poverty status. Family income information is missing for 5% of the U.S. adult population, and poverty status information is missing for 11% of the U.S. adult population (weighted results). Similarly, 5% of the adult sample is missing information on income, and 11% of the adult sample is missing information on poverty status (unweighted results).

### **Hypothesis Tests**

Two-tailed tests of significance were performed for all the comparisons mentioned in the "Selected Highlights" section of this report. No adjustments were made for multiple comparisons. The test statistic used to determine statistical significance of the difference between two percentages was

$$Z = \frac{|X_a - X_b|}{\sqrt{S_a^2 + S_b^2}} ,$$

where  $X_a$  and  $X_b$  are the two percentages being compared, and  $S_a$  and  $S_b$  are the SUDAAN-calculated standard errors of those percentages. The critical value used for two-sided tests at the 0.05 level was 1.96.

## **Appendix II**

### **Definitions of Selected Terms**

#### **Sociodemographic Terms**

**Age**—The age recorded for each adult is the age at the last birthday. Age is recorded in single years and grouped using a variety of age categories depending on the purpose of the table.

**Education**—The categories of education are based on the years of school completed or highest degree obtained for persons aged 25 and over. Only years completed in a school that advances a person toward an elementary or high school diploma, General Educational Development high school equivalency diploma (GED), college, university, or professional degree are included. Education in other schools and home schooling are counted only if the credits are accepted in a regular school system.

**Employment**—Persons 18 years of age and over were classified as currently employed if they reported that they either worked at or had a job or business at any time during the 1-week period preceding the interview. Current employment includes paid work as an employee in business, farming, or professional practice, and unpaid work in a family business or farm. Persons temporarily absent from a job or business because of a temporary illness, vacation, strike, or bad weather were considered currently employed if they expected to work as soon as the particular event



causing the absence no longer existed. Freelance workers were considered currently employed if they had a definite arrangement with one or more employers to work for pay according to a weekly or monthly schedule, either full time or part time.

Excluded from the currently employed population are persons who have no definite employment schedule, but work only when their services are needed. Also excluded from the currently employed population were (a) persons receiving revenue from an enterprise, but not participating in its operation; (b) persons doing housework or charity work for which they received no pay; (c) seasonal workers during the portion of the year when they were not working; and (d) persons who were not working, although they had a job or business, but were laid off and looking for work.

The number of currently employed persons estimated from the NHIS will differ from the estimates prepared from the Current Population Survey (CPS) of the U.S. Bureau of the Census for several reasons. In addition to sampling variability, the two surveys have the following primary conceptual differences:

1. NHIS employment estimates are for persons 18 years of age and over; CPS estimates are for persons 16 years of age and over; and
2. NHIS is a continuous survey with separate samples taken weekly; CPS is a monthly sample taken for the survey week that includes the 19<sup>th</sup> of the month.

This report combines adults currently employed, as defined previously, with those who were not employed in the week preceding the interview but who were employed within the past 12 months, in order to estimate the number of employed and unemployed adults for the year.

**Family income**—Each member of a family is classified according to the total income of all family members. Family members are all persons within the household related to each other by blood, marriage, cohabitation, or adoption. The income recorded is the total income received by all family members in the previous calendar year. Income from all sources includes wages, salaries, military pay (when an Armed Forces member lived in the family), pensions, government payments, child support or alimony, dividends, and help from relatives. Unrelated individuals living in the same household (e.g., roommates) are considered to be separate families and are classified according to their own incomes.

**Health insurance coverage**—NHIS respondents were asked about their health insurance coverage at the time of the interview. Respondents reported whether they were covered by private insurance (obtained from their employer or workplace, purchased directly, or through a local or community program), Medicare, Medigap (supplemental Medicare coverage), Medicaid, Children's Health Insurance Plan (CHIP), Indian Health Service (IHS), military coverage (including VA, TRICARE, or CHAMP-VA), a state-sponsored health plan, another government program and/or single service plans. This information was used to form two health insurance hierarchies: one for those under age 65 years and another for those persons age 65 years and over.

For persons under age 65 years, a health insurance hierarchy of four mutually exclusive categories was developed (20,21). Persons with more than one type of

health insurance were assigned to the first appropriate category in the following hierarchy:

*Private coverage*-Includes persons who had any comprehensive private insurance plan (including health maintenance organizations and preferred provider organizations). These plans include those obtained through an employer, purchased directly, or through local or community programs.

*Medicaid*-Includes persons who do not have private coverage, but who have Medicaid and/or other state-sponsored health plans including CHIP.

*Other coverage*-Includes persons who do not have private insurance or Medicaid (other public coverage), but who have any type of military health plan (includes VA, TRICARE, and CHAMP-VA) and Medicare. This category also includes persons who are covered by other government programs.

*Uninsured*-Includes persons who have not indicated that they are covered at the time of the interview under private health insurance (from employer or workplace, purchased directly, or through a State, local government or community program), Medicare, Medicaid, CHIP, a state-sponsored health plan, other government programs, or military health plan (includes VA, TRICARE, and CHAMP-VA). This category also includes persons who are only covered by IHS or only have a plan that pays for one type of service such as accidents or dental care.

For persons age 65 years and over, a health insurance hierarchy of five mutually exclusive categories was developed (22). Persons with more than one type of health insurance were assigned to the first appropriate category in the following hierarchy:

*Private coverage*-Includes older persons who have both Medicare and any comprehensive private health insurance plan (including health maintenance organizations and preferred provider organizations). These plans include those obtained through a current or former employer, purchased directly, or through local or community programs. This category also includes persons with private insurance only.

*Medicare and Medicaid*-Includes older persons who do not have any private coverage, but have Medicare and Medicaid and or other state--sponsored health plans including CHIP.

*Medicare only*-Includes older persons who only have Medicare coverage.

*Other coverage*-Includes older persons who have not been previously classified as having private, Medicare and Medicaid, or Medicare only coverage. This category also includes older persons who have only Medicaid, other state-sponsored health plans or CHIP, as well as persons who have any type of military health plan (VA, TRICARE, and CHAMP-VA) with or without Medicare.

**Uninsured**—Includes persons who have not indicated that they are covered at the time of the interview under private health insurance (from employer or workplace, purchased directly, or through a state, local government, or community program), Medicare, Medicaid, CHIP, a state-sponsored health plan, other government programs, or military health plan (VA, TRICARE, and CHAMP-VA). This category also includes persons who are covered by only IHS or only have a plan that pays for one type of service such as accidents or dental care.

For less than 1% of adults, coverage status, i.e., whether they are insured or uninsured, is unknown. Weighted frequencies indicate that approximately 0.50% of the adult population under 65 years of age and less than 0.15% of the adult population aged 65 and over fell into this "unknown" category.

**Hispanic or Latino origin and race**—Hispanic or Latino origin and race are two separate and distinct concepts. Persons of Hispanic or Latino origin may be of any race. Hispanic or Latino origin includes persons of Mexican, Puerto Rican, Cuban, Central and South American, or Spanish origins. All tables show Mexicans or Mexican-Americans as a subset of Hispanic or Latino. Other groups are not shown for reasons of confidentiality or statistical reliability.

In the 1997 and 1998 Summary Health Statistics reports, Hispanic ethnicity was shown as a part of race and ethnicity, which also included categories for non-Hispanic white, non-Hispanic black, and non-Hispanic other (some

tables showed Mexican Americans as a subset of Hispanics). Beginning in 1999, the categories for race were expanded to be consistent with the 1997 Office of Management and Budget (OMB) Federal guidelines (12), and a distinction is now made between the characteristics of race and of Hispanic or Latino origin and race. Hispanic or Latino origin and race is divided into "Hispanic or Latino" and "Not Hispanic or Latino." "Hispanic or Latino" includes a subset of "Mexican or Mexican American." "Not Hispanic or Latino" is further divided into "White, single race" and "Black or African American, single race." Persons in these categories indicated only a single race group (see the definition of race in this appendix for more information). Data are not shown for other "Not Hispanic or Latino single race" persons or multiple race persons due to statistical unreliability as measured by the relative standard errors of the estimates (but are included in the total for "Not Hispanic or Latino").

The text in this report uses shorter versions of the new OMB race and Hispanic or Latino origin terms for conciseness, and the tables use the complete terms. For example, the category "Not Hispanic or Latino, Black or African American, single race" in the tables is referred to as "non-Hispanic black" in the text.

**Marital status**—Respondents were asked to choose a marital status category. Adults could select the category they felt most appropriate for their marital situation. Beginning in 1997, a new marital status category, "living with a partner," also termed "cohabiting," was added, and persons who were "living with a partner" were considered members of the same family, whereas in the pre-1997 NHIS,

they were considered separate families. A legally annulled marriage is considered as not having taken place. Marital status is classified into the following five categories:

*Married*-This category includes all persons who identify themselves as married and who are not separated from their spouses. Married persons living apart because of circumstances of their employment are considered married. Persons may identify themselves as married regardless of the legal status of the marriage or sex of the spouses.

*Separated and divorced*-This category includes persons who are legally separated from their spouse or living apart for reasons of marital discord, and those who are divorced.

*Widowed*-This category includes persons who have lost their spouse due to death.

*Never married*-This category includes persons who were never married.

*Living with partner*-This category includes unmarried persons regardless of sex who are living together as a couple, but do not identify themselves as married.

**Place of residence**-Place of residence is classified in this report in three categories: large metropolitan statistical area (MSA) of 1,000,000 or more persons, small MSA of less than 1,000,000 persons, and not in an MSA. Generally, a MSA consists of a county or group of counties

containing at least one urbanized area of 50,000 or more, in population. In addition to the county or counties that contain all or part of the urbanized area, an MSA may contain other adjacent counties that are economically and socially integrated with the central city. The number of adjacent counties included in an MSA is not limited, and boundaries may cross State lines.

The OMB defines metropolitan statistical areas according to published standards that are applied to U.S. Census Bureau data. The definition of a metropolitan statistical area is periodically reviewed. For NHIS data from 1995 through 2005, the MSA definitions were based on the June 1993 MSA definitions that resulted from application of the 1990 OMB standards to the 1990 census. Beginning in 2006, the June 2003 metropolitan and micropolitan statistical area definitions, which resulted from application of the 2000 OMB standards to Census 2000, are used for NCHS data. The 2000 criteria for designating MSAs differ from the 1990 criteria in substantial ways, including simplification of the classification criteria of metropolitan statistical areas as well as the addition of a new category—micropolitan statistical area—for some of the nonmetropolitan counties. These changes may lessen the comparability of estimates by place of residence in 2006–2008 with estimates from earlier years. Analysts who compare NHIS frequencies across this transition in OMB standards need to recognize that some of the differences may be due to the change in the definitions of metropolitan areas. In the tables for this report, place of residence is based on variables in the 2008 in-house Household data file indicating MSA status and MSA size. These variables are collapsed into three categories based on Census 2000



population: MSAs with a population of 1,000,000 or more, MSAs with a population of less than 1,000,000, and areas that are not within an MSA. Areas not in an MSA include both micropolitan areas and areas outside the core-based statistical areas. For additional information about metropolitan statistical areas see the Census website: <http://www.census.gov/population/www/estimates/metrodef.html>.

**Poverty status**—Poverty status is based on family income and family size using the Census Bureau's poverty thresholds. "Poor" persons are defined as persons whose family incomes are below the poverty threshold. "Near Poor" persons have family incomes of 100% to less than 200% of the poverty threshold. "Not Poor" persons have family incomes that are 200% of the poverty threshold or greater. More information on the measurement of family income and poverty status is available in Appendix I.

**Race**—In the 1997 and 1998 Summary Health Statistics reports, race and ethnicity consisted of four categories: non-Hispanic white, non-Hispanic black, non-Hispanic other, and Hispanic (some tables showed Mexican Americans as a subset of Hispanics). Beginning in 1999, the categories for race were expanded to be consistent with the 1997 Office of Management and Budget (OMB) Federal guidelines (12), which now distinguish persons of "one race" from persons of "two or more races". The category "one race" refers to persons who indicated only a single race group; it includes sub-categories for white, black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander. The category

"two or more races" refers to persons who indicated more than one race group. Estimates for multiple race combinations can only be reported to the extent that they meet the requirements for confidentiality and statistical reliability. In this report, three categories are shown for multiple race individuals (a summary category and two multiple race categories: black or African American and white and American Indian or Alaska Native and white). Other combinations are not shown due to statistical unreliability as measured by the relative standard errors of the estimates (but they are included in the total for "two or more races").

Prior to 2003, "Other race" was a separate race response on the NHIS, although it was not shown separately in the tables of the Summary Health Statistics reports. In the 2003 NHIS, however, editing procedures were changed to maintain consistency with the U.S. Census Bureau procedures for collecting and editing data on race and ethnicity. As a result of these changes, in cases where "Other race" was mentioned along with one or more OMB race groups, the "Other race" response is dropped, and the OMB race group information is retained on the NHIS data file. In cases where "Other race" was the only race response, it is treated as missing and the race is imputed. Although this change has resulted in an increase in the number of persons in the OMB race category "White" because this is numerically the largest group, the change is not expected to have a substantial effect on the estimates in this report. More information about the race/ethnicity editing procedures used by the U.S. Census Bureau can be found at the following website:

<http://www.census.gov/popest/archives/files/MRSF-01-US1.pdf>.

The text in this report uses shorter versions of the new OMB race terms for conciseness, and the tables use the complete terms. For example, the category "Black or African American, single race" in the tables is referred to as "Black" in the text.

**Region**—In the geographic classification of the U.S. population, states are grouped into four regions used by the U.S. Census Bureau:

<i>Region</i>	<i>States included</i>
Northeast	Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, and Pennsylvania;
Midwest	Ohio, Illinois, Indiana, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Kansas, and Nebraska;
South	Delaware, Maryland, District of Columbia, West Virginia, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana,

Oklahoma, Arkansas, and  
Texas;

West

Washington, Oregon,  
California, Nevada, New  
Mexico, Arizona, Idaho, Utah,  
Colorado, Montana, Wyoming,  
Alaska, and Hawaii.

### **Terms Related to Health Characteristics and Outcomes**

**Arthritis and chronic joint symptoms**—In 2002 there were major changes to core questions about arthritis and joint symptoms. Questions about joint symptoms were altered to exclude the respondent's back and neck. The reference period was changed from "past 12 months" to "past 30 days," and chronic joint symptoms were defined as having started "more than 3 months ago." The arthritis diagnosis question ("Have you ever been told by a doctor or other health professional that you have arthritis...") was modified to include "some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia." These questions remained unchanged since 2002, and estimates for adults with self-reported arthritis diagnosis and self-reported chronic joint symptoms are shown separately in Tables 7–8 and VII.

**Asthma**—This report covers both adults who have ever been told they have asthma by a doctor or other health professional, and adults who still have asthma (currently).

**Bed day**—A day during which a person stayed in bed more than half a day because of illness or injury. All hospital

days for inpatients are considered bed days even if the patient was not in bed more than half a day.

**Conditions**—Condition is a general term that includes any specific illness (physical or mental) or injury. From 1978 to 1996, six chronic condition lists were used in the NHIS. Those six lists covered 133 conditions. The 1997 (and beyond) NHIS chronic condition data cover a substantially reduced number of conditions. All data in the 2008 Sample Adult component are self-reported, and most questions ask whether a condition was diagnosed by a doctor or a health professional. The reference periods for the conditions vary. There are four basic reference periods: ever, past 12 months, past 30 days, and currently.

**Difficulty in physical functioning**—Refers to the degree of difficulty respondents experienced performing nine physical activities without the assistance of another person and without using special equipment. Questions for the sample adult regarding difficulty in physical functioning cover the following activities: walking a quarter of a mile (or 3 city blocks); climbing 10 steps without resting; standing for 2 hours; sitting for 2 hours; stooping, bending, or kneeling; reaching over one's head; using the fingers to grasp or handle small objects; lifting or carrying 10 pounds (such as a bag of groceries); and pushing or pulling large objects (such as a living room chair). Response categories include "not at all difficult," "only a little difficult," "somewhat difficult," "very difficult," "can't do at all," or "do not do this activity." Adults who indicated that the specific activity was "very difficult" or that they "can't do (it)

at all" were combined in a single category as having difficulty in physical functioning. Those who responded "do not do this activity" were not included in the tables.

**Doctor or other health professional**-Doctor refers to medical doctors (MDs) and osteopathic physicians (DOs), including general practitioners and all types of specialists (such as surgeons, internists, gynecologists, obstetricians, proctologists, psychiatrists, dermatologists, and ophthalmologists). Other health care professional includes physician assistants, psychologists, nurses, physical therapists, chiropractors, etc.

**Health status**-Respondent-assessed health status is obtained from a question in the survey that asked respondents, "Would you say your health in general was excellent, very good, good, fair, or poor?" Information was obtained about all respondents, with proxy responses allowed for adults not taking part in the interview. Prior health status is obtained from the question asked of all sample adults, "Compared with twelve months ago, would you say that your health is better, worse, or about the same?"

**Work-loss day**-A day in which a currently employed person 18 years of age or over missed more than half a day from a job or business due to illness or injury.

#### **Terms Related to Sample Adult Behavior**

**Alcohol drinking status**-Refers to the respondent's alcohol drinking status at the time of interview. There

are five alcohol consumption categories. Two refer to current drinking, two to former drinking, and the fifth to lifetime abstinence.

*Current regular drinker*-had 12 drinks or more in his/her lifetime and at least 12 drinks in the past year.

*Current infrequent drinker*-had 12 drinks or more in his/her lifetime, but fewer than 12 drinks in the past year.

*Former regular drinker*-had 12 drinks or more in his/her lifetime, and at least 12 drinks in any 1 year, but no drinks in the past year.

*Former infrequent drinker*-had 12 drinks or more in his/her lifetime, but never as many as 12 in a single year, and no drinks in the past year.

*Lifetime abstainer*-had fewer than 12 drinks in his/her entire lifetime.

In 2002, a change was made in the calculation of the former infrequent and current infrequent drinker categories. Prior to 2002, these categories included a small number of respondents who indicated either the frequency of their drinking but not the amount, or the amount but not the frequency, at the same time satisfying the broad definition of either former or current drinker. These individuals with incomplete responses are now

categorized as "Former or Current drinker status unknown" and are not shown in the tables.

**Body mass index**-Body mass index (BMI) is calculated from the sample adult's responses to survey questions regarding height and weight.  $BMI = \text{Weight (in kg)} / [\text{Height (in m)}]^2$ . For both sexes, the category "Underweight" is defined as a BMI less than 18.5. "Healthy weight" is defined as a BMI greater than or equal to 18.5 and less than 25.0. "Overweight" is defined as a BMI greater than or equal to 25.0 and less than 30.0. "Obese" is defined as a BMI greater than or equal to 30.0.

**Cigarette smoking status**-Information on cigarette smoking status at the time of interview is derived from two questions on the survey. All respondents are first asked, "Have you smoked at least 100 cigarettes in your entire life?" Respondents who answered "yes" to the previous question are then asked, "Do you now smoke cigarettes every day, some days, or not at all?" The information obtained from these two questions is combined to create the variable represented in Tables 24-25 and XV.

*Current smoker*-There are two categories of current smokers. The first category includes persons who smoke every day, and persons in the second category smoke only on some days.

*Former smoker*-This category includes persons who have smoked at least 100 cigarettes in their lifetime, but currently do not smoke at all.



*Nonsmoker*—This category includes persons who have never smoked at least 100 cigarettes in their lifetime.

**Human Immunodeficiency Virus (HIV) testing status**—This variable is based on a question that asked whether the respondent has ever had his/her blood tested for HIV. Starting in 2000, this question is slightly different than the one used in 1997–1999 that asked about acquired immunodeficiency syndrome (AIDS) virus testing status (not HIV). Any HIV test as part of a blood donation is excluded.

**Leisure-time physical activity**—All questions related to leisure-time physical activity were phrased in terms of current behavior and lack a specific prior reference period. Starting with 1998 data, leisure-time physical activity is assessed in the National Health Interview Survey by asking adults a series of questions about how often they do vigorous or light to moderate physical activity of at least 10 minutes in duration and for how long these sessions generally last. Vigorous physical activity is described as causing heavy sweating or a large increase in breathing or heart rate and light to moderate as causing light sweating or a slight to moderate increase in breathing or heart rate. Adults classified as inactive did not report any sessions of light to moderate or vigorous leisure-time physical activity of at least 10 minutes or reported they were unable to perform leisure-time physical activity. Adults who engaged in some leisure-time physical activity reported at least one session of light to moderate or vigorous activity of at least 10 minutes in duration but did not meet the requirement for regular leisure-time activity. Adults who

engaged in regular leisure-time activity reported at least three sessions per week of vigorous leisure-time physical activity lasting at least 20 minutes or at least five sessions per week of light to moderate physical activity lasting at least 30 minutes.

**Number of visits to a doctor or other health professional in the past twelve months**-This is the number of visits to a doctor's office, clinic or other place that the respondent has made in the past 12 months regarding his/her own personal health. Overnight hospital stays, hospital emergency room visits, home visits and telephone calls are excluded.

**Time since last dental contact**-This is the length of time since the respondent last saw or talked to a dentist, including dental specialists as well as dental hygienists, prior to the week of interview.

**Time since last physician or other health care professional contact**-This is the length of time, prior to the week of interview, since the respondent last consulted a physician or other health care professional in person or by telephone for health treatment or advice of any type. This may include a contact while a patient is in the hospital as well as a contact from a home visit. The respondent is asked: "About how long has it been since you saw or talked to a doctor or other health professional about your own health?" The response categories for this question are: "6 months or less," "more than 6 months, but not more than 1 year ago," "more than 1 year, but not more than 2 years

ago," "more than 2 years, but not more than 5 years ago," "more than 5 years ago," and "never."

**Usual place of health care**-Usual place of health care was based on a question that asked whether respondents had a place that they usually went to when they were sick or needed advice about their health. If yes, they were asked "What kind of place {is it/do you go to most often}-a clinic, a doctor's office, an emergency room, or some other place?" The choices for this second question are: "clinic or health center," "doctor's office or HMO," "hospital emergency room," "hospital outpatient department," "some other place," or "doesn't go to one place most often." Although "hospital emergency room" is not considered a "usual place of health care" in other publications, in this report it is combined with "hospital outpatient clinic." Also combined in this report are "some other place" and "doesn't go to one place most often."